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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/553,137 04/19/00 BLOMQUIST

H TRW(VSSIM) 44

EXAMINER

PM82/0509
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MILLER, F	
ART UNIT	PAPER NUMBER

3641
DATE MAILED:

05/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/553,137

Applicant(s)

BLOMQUIST, HAROLD R.

Examiner

Edward A. Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2001.
- 2a) ☐ This action is FINAL.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.

- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

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1. Applicant's election of Group I in Paper No. 4 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The nature of the polymer in the invention is critical or essential to the practice of the invention, but it is neither included in the claim(s) nor enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Note Stewart et al. 5,552,257 at col. 2, lines 45-49, where GAP is a polymer, but that a block copolymer must be derived from at least two different monomers. Similarly, Manser 4,393,199 teaches at col. 5, line 6 - col. 6, line 29, e.g., the reaction to form block copolymers, particularly in col. 1, and that such is distinctly a different thing than reaction of hydroxyl terminal groups with an isocyanate to produce a polyurethane. Thus, throughout the specification and claims, incorrect language or terminology is used to such an extent that the ordinary artisan is not taught what the invention is, or how to practice it. To refer to toluene diisocyanate as a block is likewise entirely wrong. The idea of physical crosslinking is also not correctly conveyed to the person of ordinary skill in the art. A single moiety is, by definition, not a poly or block or oligomer entity, it is a monomer. What does this refer to? Compare Johnson et al. '482, col. 2 generally, and lines 42-46. As disclosed in the specification, mention of hydrogen

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bonding is made. However, there are hydrogen atoms throughout the polymer, and it is not clear what the hydrogen bonding intends for this - does one hydrogen atom bond to another hydrogen atom? Does hydrogen bond to unsaturation? Does hydrogen bond to nitrogen, in azide, e.g., and if so, what is the basis therefore? Does the hydrogen bond to something else? Could the alleged physical crosslink of hydrogen which allows melt reprocessing instead be decomposing from heat related depolymerization? All of the polymer terms including those in claim 12, e.g., lack proper disclosure basis. These are exemplary.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-13~~4~~ are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite for the reasons advanced above, that the language of the claims is incorrect, cannot be understood by the person of ordinary skill in the art, and fails to set forth the metes and bounds of the claimed invention. In claim 1, it is not clear what is required by "polyurethane thermoplastic elastomer", particularly since the following language does not describe or form the basis for such, but merely recites what would be required for an ordinary polyurethane polymer. Further, the claim language of "aromatic diisocyanate and a linear energetic polymer" likewise does not form a "linear block copolymer", instead forming a polyurethane to the person of ordinary skill in the art. Thus it is not clear what the claims require or what the metes and bounds thereof are. Claim 13 is improperly dependent for lacking the claim (number) that it depends from. The terms therein containing "segment" and "elastomer" lack proper antecedent basis. The amount of the segment part of the polymer does not make sense. In claim 12, the same terms lack any

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antecedent basis, or any definition of what applicant intends. In claim 11, it is not clear what this requirement means; whether this requires some limitation of the composition not otherwise stated, or if it is merely an inherent limitation. Claims 1 and 4 require a functionality of 2 or less, but claim 5 improperly recites "about 2" which includes more than two, and thus is broader than, or divergent from, the terms of the claim(s) it depends from. What does claim 2 require? Is this inherent, or due to some specific polymer recitation, or from a follow on reaction (and what kind), not otherwise stated? These are exemplary of problems found throughout.

6. While it is not inconceivable that some limited patentable invention is present within the concept or boundaries of this application, it is not clear that patentability is obtainable (and certainly not readily) due to the great and fundamental 35 U.S.C.112 problems created in this application.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeigler in view of Manzara et al., Manser, and Gomez et al.

Zeigler teaches the basic idea of the claimed invention, an air bag system with a gas generating composition therein that comprises an oxidizer of ammonium nitrate, e.g., a fuel of HMX or RDX, and an energetic binder that may be GAP. Not only is this taught generally, but claim 12, e.g., directly to this was cancelled in this reissue of the original patent. Manzara et al., Manser, and Gomez et al. all teach further regarding GAP polymers, including the functionality may be 2, the molecular weights may be varied, that aromatic isocyanates (Manser, col. 6, line 19) and

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even diphenylmethane diisocyanate (Manzara et al. col. 13, lines 24-30) are suitable chain extension agents. Variation of specific notoriously well known ingredients or amounts would have been obvious to one of ordinary skill in the art. It is well settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning either this or an earlier communication from the Examiner should be directed to Examiner Edward A. Miller at (703) 306-4163. Examiner Miller may normally be reached daily, except alternate Fridays, from about 9:30 AM to 7 PM.

If attempts to reach Examiner Miller by telephone are unsuccessful, his supervisor Mr. Carone can be reached at (703) 306-4198. The Group fax number is (703) 305-7687.

If there is no answer, or for any inquiry of a general nature or relating to the application status, please call the Group receptionist at (703) 308-1113.

Miller/em
May 7, 2001



EDWARD A. MILLER
PRIMARY EXAMINER